

REMARKS

The following claims stand rejected under 35 U.S.C. § 102 as anticipated by
“anticipatory references”, as follows:

1. Claims 1, 3-4, 6-7, 9-10 and 13-15 by US H2113 (Nichols et al);
2. Claims 1-6, 9-10 and 13-15 by EP 1167466 (Hirasa et al);
3. Claims 1, 3-7, 9-10 and 13-15 by WO 00/52106 (Ellis et al) taken in view of U.S. 6,383,644 (Fuchs);
4. Claims 1, 3-4, 6, 9-10 and 13-15 by U.S. 2003/0184629 (Valentini et al);
5. Claims 1, 6, 9-10 and 14 by U.S. 2004/0092622 (Pearlstine et al); and
6. Claims 14-17 by U.S. 5,750,592 (Shinozuka et al).

The following claims also stand rejected under 35 U.S.C. § 103(a) as unpatentable, as follows:

7. Claim 2 over Nichols et al, Ellis et al, or Valentini et al, any of which in view of U.S. 6,245,832 (Suzuki et al);
8. Claim 5 over Nichols et al, Valentini et al or Pearlstine et al, any of which in view of Hirasa et al;
9. Claim 8 over Nichols et al or Ellis et al, either of which in view of EP 1219689 (Sano et al);
10. Claims 7-8 over Hirasa et al in view of Sano et al;
11. Claims 1, 4, 6 and 9-17 over Shinozuka et al, in view of either U.S. 5,772,746 (Sawada et al), or U.S. 6,848,777 (Chen et al);
12. Claim 2 over Shinozuka et al in view of either Sawada et al or Chen et al, and further in view of Suzuki et al;

13. Claims 3 and 5 over Shinozuka et al in view of either Sawada et al or Chen et al, and further in view of Hirasa et al; and
14. Claims 7-8 over Shinozuka et al in view of Sawada et al or Chen et al, and further in view of Sano et al.

The above rejections are all traversed.

As recited in above-amended Claim 1, an embodiment of the present invention is a pigment-dispersed aqueous recording liquid containing at least a pigment and a resin, which comprises from 60 to 200 parts by weight of the resin to 100 parts by weight of the pigment, wherein at least one of the resin is a water-dispersible urethane based resin, a weight fraction of a polyurethane urea part of which is at most 2.0 wt% to the urethane based resin, and the pigment dispersed in the recording liquid has a dispersion particle size D50 of from 40 to 100 nm.

The invention is characterized by (1) limiting the polyurethane urea content of the polyurethane based resin to at most 2.0 wt.% and (2) employing a resin to pigment weight ratio of from 0.6:1 to 2:1, which ratio is generally higher than that of the prior art.

The specification herein contains comparative data demonstrating the significance of both limitations (1) and (2). Examples 1-5 are according to the present invention.

Comparative Examples 1-6 are for purposes of comparison. The Examples and Comparative Examples were evaluated according to the measurement methods described in paragraphs (1) to (9), beginning in the specification at page 35, line 10. Comparative Example 1 shows inferior storage stability and visual evaluation when limitation (1) is not satisfied.

Comparative Examples 2, 5 and 6 show at least inferior storage stability when (2) is not satisfied. See Table 6 at page 50 of the specification. Comparative Examples 3 and 4 employ commercial ink jet printer ink, and show inferior visual evaluation.

The applied prior art could not have predicted the above-discussed results.

The Examiner finds that the above anticipatory references (other than Shinozuka et al) meet above-discussed limitation (1) because either the prior art does not disclose any polyurethane urea content of a corresponding polyurethane based resin, suggesting that it could be 0%; or if the addition of a polyamine chain extender is optional, which the Examiner finds necessarily would translate to a weight fraction of a polyurethane urea part to less than 2 wt.% (see, for example, paragraph 6 of the Office Action); or, in the case of Valentini et al [0035] and Pearlstone et al [0024], urea groups are disclosed as optionally present.

As stated in *In re Arkley*, 455 F.2d 586, 590, 172 USPQ 524, 526 (CCPA 1972) (**copy enclosed**):

[R]ejections under 35 U.S.C. 102 are proper only when the claimed subject matter is identically disclosed or described in "the prior art." Thus, for the instant rejection under 35 U.S.C. [102(b)] to have been proper, the . . . reference must clearly and unequivocally disclose the claimed [subject matter] or direct those skilled in the art to the [subject matter] without any need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference. Such picking and choosing may be entirely proper in the making of a 103, obviousness rejection, where the applicant must be afforded an opportunity to rebut with objective evidence any inference of obviousness which may arise from the similarity of the subject matter which he claims to the prior art, but it has no place in the making of a 102, anticipation rejection.

Regarding the disclosure in the anticipatory references other than Valentini et al and Pearlstone et al, it is noted that a urea part may be present in the urethane based resin in the absence of a polyamine chain extender, such as when the polyurethane based resin is not prepared under substantially anhydrous conditions. Indeed, as described in the specification at page 18, lines 5-10, the presence of water can cause the production of a polyamine by reacting with a polyisocyanate compound starting material. Thus, since none of the prior art specifically discloses how their respective urethane-based resins are prepared or if so disclosed, make no effort to limit urea content, the only reasonable conclusion is that the prior art does not recognize the significance of above-discussed limitation (1).

Regarding Valentini et al, it does not anticipate the presently-claimed invention as per *Arkley*. All of the exemplified polyurethane dispersions therein, i.e., PU1 through PU10 appear to have been produced under conditions that would not limit the urea part content, and all of the examples contain pigment and resin in amounts that are outside the terms of above-discussed limitation (2) of the present claims. Thus, at best, Valentini et al is available under 35 U.S.C. § 103(a) only. But the above-discussed comparative data demonstrates patentability over Valentini et al (as well as the other applied prior art). A similar analysis can be made for Pearlstine et al.

Nor can it be assumed that Shinozuka et al meets the terms of Claims 14-17, since there is no indication that any of the commercial polyurethane resins exemplified therein meet above-discussed limitation (1) which, although not a limitation in these claims, nevertheless, has an effect on whether the actual limitations of these claims are met.

For all the above reasons, it is respectfully requested that the rejections over prior art be withdrawn.

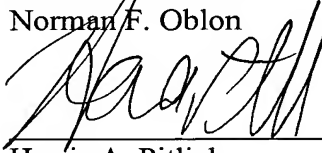
The rejection of Claims 1-15 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. With regard to the rejections in subparagraphs (a) and (c) in paragraph 2, they would appear to be moot. With regard to the recitation of “dispersion particle size D50,” the meaning of this term is defined in the specification at page 31, lines 10-13.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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